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News from the Savannah River National Laboratory

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Federal Research Facilities in South Carolina Join Forces to Advance Ocean Health and Homeland Security

AIKEN, S.C. – A collaborative agreement between U.S. Department of Energy and the Commerce Department's National Oceanic and Atmospheric Administration research facilities in South Carolina will strengthen advances in homeland security, marine health, and ocean observation technologies through sensors to detect biological toxins and chemical hazards while maintaining ocean health and water quality.

Toxins from harmful algae and marine bacteria or viruses can affect ecosystem health and homeland security, two vitally important issues to lawmakers in South Carolina and across the nation. The Port of Charleston is the busiest container port along the U.S. Southeast and Gulf coasts and the focus of intense maritime-security efforts. Moreover, ocean health and water quality are inextricably linked to South Carolina's quality of life and economic development, especially its tourism industry, which generates nearly \$15 billion annually.

This partnership combines research efforts at DOE's Savannah River National Laboratory (SRNL) in Aiken with three of NOAA's facilities in the Charleston area — the Center for Coastal Environmental Health and Biomolecular Research, the Hollings Marine Laboratory, and the NOAA Coastal Services Center.

"The Savannah River National Laboratory and NOAA represent two of the largest federal laboratories in South Carolina focused on environmental health, so this agreement has far-reaching implications for the state and the nation," said Geoffrey I. Scott, Ph.D., director of NOAA's Center for Coastal Environmental Health and Biomolecular Research. "Our laboratories have complementary capabilities, and this agreement will allow us to accomplish much more than either agency could achieve on its own."

"The Savannah River National Laboratory has a long history of expertise in environmental sciences and microbiology," said SRNL Laboratory director G. Todd Wright, Ph.D., of Washington Savannah River Company, the Washington Group International subsidiary that operates the laboratory for DOE. SRNL's history includes the discovery in the 1970s of the water-borne microbe that causes Legionnaire's Disease, along with extensive work in the development of environmental assessment and restoration technologies.

Homeland security is a major research focus for SRNL. The lab has developed radiation sensors that are used in several port locations nationally and is also researching sensors to detect biological toxins and chemical hazards. "This agreement allows us to combine our skills with the vast expertise and resources of NOAA in a way that will provide benefits in numerous endeavors," said Wright.

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NOAA's Center for Coastal Environmental Health and Biomolecular Research is a national leader in researching algal toxins and the organisms that produce them. Harmful algal blooms, commonly known as "red tides," can cause toxins to accumulate in marine animals and lead to closures of recreational and commercial fisheries, deaths among waterfowl and marine mammals, and even human illness and mortality.

Another NOAA facility, the Hollings Marine Laboratory, fosters science and biotechnology solutions that help protect, maintain, and restore coastal ecosystems. It also contains state-of-the-art facilities for working with highly toxic and infectious agents that may affect human health and is home to the Center of Excellence in Oceans and Human Health research.

The NOAA Coastal Services Center, which serves the nation's coastal resource programs, provides information and products pertinent to the nation's Integrated Ocean Observing System (IOOS), a network of buoys, ships, satellites, underwater vehicles and other devices that collect data needed to detect and predict changes in coastal waters.

Scientific exchanges among the facilities have led to presentations, technical sessions at several homeland security workshops/symposia, and ongoing research collaborations. This research partnership is expected to generate more extensive data bases and spur advances in technologies that gauge and forecast ecosystem health.

NOAA is celebrating 200 years of science and service to the nation. From the establishment of the Survey of the Coast in 1807 by Thomas Jefferson to the formation of the Weather Bureau and the Commission of Fish and Fisheries in the 1870s, much of America's scientific heritage is rooted in NOAA.

NOAA is dedicated to enhancing economic security and national safety through the prediction and research of weather and climate-related events and information service delivery for transportation, and by providing environmental stewardship of our nation's coastal and marine resources. Through the emerging Global Earth Observation System of Systems (GEOSS), NOAA is working with its federal partners, more than 60 countries and the European Commission to develop a global monitoring network that is as integrated as the planet it observes, predicts and protects.